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Evaluation of rotation experiences of emergency medicine specialist students

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ABSTRACT

Aims: This study aims to analyze emergency medicine residents' rotation experiences and training deficiencies, propose recommendations to improve these processes and contribute to future research in this field.

Methods: This cross-sectional study was conducted between September 1 and November 30, 2024. Data were collected via a digital survey and analyzed under three main categories: sociodemographic characteristics, rotation experiences, and training adequacy. Statistical analyses were performed using SPSS version 15, with a significance level set at $p<0.05$.

Results: The majority of participants (n=130) were between the ages of 30-35 (50%) and male (61.5%). Most had 2-4 years of residency experience, and a significant portion of participants worked in Training and Research Hospitals and City Hospitals (56.9%). It was noted that in-service training during rotations was not consistently provided, with only 24.6% of participants reporting that they received training in every rotation. Supervision of rotation programs was found to be more prevalent in Training and Research Hospitals. The anesthesia and reanimation, pediatrics, and cardiology departments were identified as the most contributory to training, while the radiology, obstetrics and gynecology departments were found to have limited contributions. Additionally, participants indicated that foreign rotations and departments such as thoracic surgery and plastic surgery should be added to the program. In contrast, departments like neurology and general surgery should be removed. Overall, it was concluded that rotations are more focused on filling service gaps rather than training, highlighting the need for improvements in duration, content, and supervision processes.

Conclusion: The extension of rotation durations, the structuring of in-service training, and the enhancement of supervision are recommended for emergency medicine residency training. While processes are evaluated positively in training and research hospitals, significant deficiencies in education and clinical infrastructure have been identified in medical faculties. Addressing these challenges and promoting inter-institutional collaboration is crucial for improving the efficiency of rotations.

Keywords: Emergency medicine, education, residency, rotation, supervision, training

INTRODUCTION

Emergency medicine residency training is a comprehensive educational process designed to develop clinical skills, behaviors, and attitudes through a curriculum based on fundamental principles aimed at enhancing the effectiveness and quality of healthcare services. This process not only focuses on acquiring the ability to intervene appropriately with patients; but also encompasses areas of personal development, such as knowledge transfer related to health, management, and research skills. These characteristics broaden the scope of emergency medicine education, while simultaneously necessitating a multifaceted curriculum to adapt to the ever-evolving dynamics of the healthcare sector.[1]

Emergency medicine is recognized as one of the essential specialties at the international level.[2] In Turkiye, the recognition of emergency medicine as an independent medical specialty occurred through a Cabinet decision on April 12, 1993, under the title "First and emergency aid." This decision was published in the Official Gazette on April 30, 1993, formalizing its status. With the inclusion of emergency medicine in the Regulation on Medical Specialization for

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the first time and the establishment of the first Department of Emergency Medicine, this field gained recognition as an independent branch in the academic world.[3]

Currently, emergency medicine residency training in Turkey is conducted in universities and training research hospitals by national standards set by the Medical Specialization Board (MSB). The training period is four years, and it includes rotation programs that promote a multidisciplinary perspective and provide a broad knowledge base.[4] These rotations allow emergency medicine residents to develop their knowledge and skills in various specialties and contribute to their understanding of a multidisciplinary approach.[5]

The core curriculum of emergency medicine residency training is designed not only to enable students to acquire theoretical knowledge; but also to develop their practical skills through both in-clinic and out-of-clinic educational activities.[4] This structure ensures that residency students gain experience in various disciplines while fostering a multifaceted approach to disease and treatment processes.

However, there are some concerns regarding the efficiency of rotations and their contributions to education. While emergency medicine residents have the opportunity to observe the clinical practices of various specialties during rotations, feedback suggests that certain specialties, due to the intensity of their training processes, experience deficiencies. These feedbacks have sparked discussions about whether rotations meet students' educational expectations.[5] The inability of students to gain the expected experience in certain rotations or to acquire sufficient clinical practice indicates the necessity for more effectively structured educational content.[6]

This study aims to analyze the experiences and opinions of emergency medicine residency students regarding rotations, examining observed educational deficiencies and the underlying causes. Based on an analysis of the current literature, the study aims to provide recommendations for the improvement of the educational process. It is anticipated that the results of this study will guide and contribute to future research aimed at enhancing the efficiency of rotations and improving the quality of education in emergency medicine residency training.

METHODS

This study was conducted after obtaining approval from the Ethics Committee of Kahramanmaraş Sütçü İmam University, Faculty of Medicine (Date: 26.08.2024, Decision No: 03). Furthermore, by the Declaration of Helsinki, written informed consent was obtained from all participants involved in the study.

This cross-sectional study was conducted to analyze the rotation experiences and opinions of emergency medicine residents working in various university hospitals and training-research hospitals across Turkey. The study was conducted between September 1, 2024, and November 30, 2024. The study included emergency medicine residents who volunteered to participate and consented to the research. During the data collection process, the purpose and scope of the study were explained to the participants, and written informed consent was obtained.

Participants who were not emergency medicine residents or those who provided incomplete data were excluded from the study. Additionally, individuals who refused to participate in the study were also excluded from the study.

A questionnaire developed by the researchers, based on a literature review, was used to collect data. The questionnaire consisted of three main sections:

1. **Sociodemographic information:** This section included basic information such as gender, age, year of residency, and the institution where the participant was employed.
2. **Rotation experiences and opinions:** Questions regarding rotation durations, contents, availability, and adequacy of in-clinic training, the communication of rotation objectives, and the extent to which these objectives were achieved were included.
3. **Effectiveness and supervision of rotations:** This section assessed the adequacy of the education provided during rotations, supervision processes, and participants' recommendations regarding these processes.

The questionnaires were prepared electronically (via Google Forms) and distributed to participants via email and social media channels. Completing the questionnaire took approximately 10 minutes. Participants were allowed to complete the survey only once, and anonymity was ensured throughout the process.

Statistical Analysis

The collected data were analyzed using SPSS version 15 (Statistical Package for Social Sciences, SPSS Inc., Chicago, IL, USA). Descriptive statistics, including frequency and percentage distributions for categorical variables and mean±standard deviation (SD) or median (IQR: interquartile range) for continuous variables, were presented.

Differences between groups were analyzed using the Chi-square test or Fisher's exact test for categorical variables. A p-value of <0.05 was considered statistically significant.

This methodological approach was carefully designed to ensure that the study's findings were assessed in a reliable and valid manner.

RESULTS

Detailed analyses were conducted on the socio-demographic characteristics of the participants included in this study, their opinions regarding rotation programs, and the impact of these programs on residency training. The demographic characteristics of the participants, their rotation experiences, and their evaluations of these experiences are presented in detail below.

Sociodemographic Characteristics and Participant Profile

Among the 130 participants, 61.5% were male and 38.5% were female. The majority of participants (50.0%) were aged between 30–35 years, 39.2% were aged between 25–30 years, and 10.8% were over 35 years old. When considering the distribution based on years of residency, the largest groups were those with 2–3 years of experience (21.5%) and 3–4 years of experience (20.8%), followed by those with 1–2 years of experience, comprising 24.6%. Additionally, participants who have been working for more than 4 years or hold the title of emergency medicine specialist stand out, accounting for

23.1%. Based on the institutions where they work, 56.9% of the participants are employed in training and research or city hospitals, while 43.1% work in medical faculties.

Detailed information regarding the socio-demographic characteristics and participant profile of emergency medicine residents is presented in Table 1.

Table 1. Sociodemographic characteristics and participant profile

		n	%
What is your gender?	Male	80	61.5%
	Female	50	38.5%
What is your age?	>35	14	10.8%
	25-30	51	39.2%
	30-35	65	50.0%
What year of residency are you in?	Less than 1 year	13	10.0%
	1-2 years	32	24.6%
	2-3 years	28	21.5%
	3-4 years	27	20.8%
	More than 4 years or emergency medicine specialist	30	23.1%
Which of the following institutions do you work at?	Training and research hospital, city hospital	74	56.9%
	Faculty of medicine	56	43.1%

Evaluations of the Rotation Program

Participants were asked about the duration of their rotations and their opinions regarding its adequacy. Among them, 43.1% considered the rotation duration sufficient, 27.7% found it partially sufficient, and 18.5% deemed it insufficient. It was noted that in some cases, in-clinic training was beneficial; only 23.8% described this training as unhelpful.

Regarding the status of in-clinic training during rotations, 60.8% of participants reported receiving training in some rotations, 24.6% participated in training during every rotation, while 11.5% indicated that they did not receive any in-clinic education. In line with the recommended training year, 59.2% of participants started their rotations on time, 10.8% started earlier, 23.8% started later, and 6.2% were involved in the process due to compulsory inclusion.

Various parameters related to the rotation processes of emergency medicine residents-such as the status of in-clinic training, efforts to achieve rotation objectives, and evaluations of rotation duration-are presented in detail in Table 2.

Evaluation of Achievement of Rotation Objectives and Supervision Processes

The distribution of participants' success in achieving rotation objectives was evenly divided: 33.8% reported fully achieving their objectives, 33.1% partially achieving them, and 33.1% not achieving them at all. The proportion of participants who considered their efforts sufficient to meet these objectives was 47.7%, while 26.9% believed their efforts were insufficient (Table 3).

Variations were observed in the notification times for rotations: 42.3% were informed within one month, 23.8% within one year, 20% only a few days in advance, and 13.8% stated that they had not received any prior notification.

Table 2. Evaluations of the rotation program

		n	%
Do you think the duration of your rotation program is sufficient?	Yes	56	43.1%
	I have no idea	14	10.8%
	No	24	18.5%
	Partially	36	27.7%
What was expected of you during the rotations?	The training required for our specialty was focused on.	30	23.1%
	To fill the service gap, to address the shortage of residents and staff.	63	48.5%
	To complete our rotation period and return to our clinic.	36	27.7%
	Emergency on-calls continue during the rotation, and for the remaining days, rotations are carried out for up to 10 days.	1	0.8%
	I don't know	12	9.2%
Are there in-clinic training during the rotations you participate in?	Yes-some of them	79	60.8%
	Yes-all of them	24	18.5%
	No	15	11.5%
If you participated in in-clinic training during the rotations, did you find them useful?	Yes-some of them	70	53.8%
	Yes-all of them	29	22.3%
	No	31	23.8%
Did you participate in in-clinic training during the rotations?	Yes-some of them	61	46.9%
	Yes-all of them	32	24.6%
	No	37	28.5%
Did you complete the relevant rotation in the recommended training year?	Yes	77	59.2%
	No-earlier	14	10.8%
	No-later	31	23.8%
	No-I was required to complete it at the end of the training process.	8	6.2%

Table 3. Achievement of goals and effective supervision approaches in rotation processes

		n	%
Do you think you have put enough effort to achieve your rotation goal?	Yes	62	47.7%
	No	35	26.9%
	Partially	33	25.4%
Do you think you have achieved your rotation goals?	Yes	44	33.8%
	No	43	33.1%
	Partially	43	33.1%
Were your rotation goals communicated to you before starting the relevant rotation?	Yes-verbally	58	44.6%
	Yes-in written form	4	3.1%
	No	68	52.3%
Do you think the rotations should be better supervised?	Yes	61	46.9%
	I have no idea	24	18.5%
	No	45	34.6%
Is there a designated specialist or faculty member to supervise your rotation training in your clinic?	I don't know	43	33.1%
	Yes	54	41.5%
	No	33	25.4%

Approximately half of the participants (46.9%) expressed that rotations should be better supervised, indicating a perception of inadequacy in the current supervision mechanisms. On the other hand, 34.6% stated that no additional supervision was necessary, while 18.5% did not provide an opinion on the matter.

Responses regarding the assignment of authorized individuals for rotation supervision varied. While 41.5% of participants reported that such assignments were in place, 33.1% were unaware of any such arrangements, and 25.4% indicated that no such practice existed.

Table 3 provides a detailed analysis of emergency medicine residents' achievement of rotation objectives and their views on the supervision of rotations.

Table 4 shows the achievement of objectives and fulfillment of expectations for residents in different clinical rotations. Notably, high percentages of "No" responses were observed in the obstetrics and gynecology (39.2%), orthopedics and traumatology (32.3%), and pulmonology (32.3%) departments.

On the other hand, the cardiology department stood out with 35.4% of participants responding "Yes-partially," indicating that the majority reported partial success in meeting the rotation objectives. High rates of "I do not know the objectives" responses were reported in departments such as internal medicine, neurology, and radiology.

Analysis of Institutional Differences in Rotation Programs

Evaluations of the adequacy of rotation programs and participants' experiences revealed significant differences between institutions. Although there were no significant differences in rotation duration and contribution to education between training and research hospitals, city hospitals, and medical faculties ($p>0.05$), more positive results were obtained regarding the presence of in-clinic training in training and research hospitals ($p=0.010$).

The supervision of rotations also showed variability. In training and research hospitals (48.6%), supervision was performed at a higher rate than in medical faculties (42.9%), although this difference was not statistically significant ($p=0.339$).

Regarding the method of informing participants about rotation objectives, oral notification was common in both institutions (training and research hospitals: 43.2%; medical faculty: 46.4%), while the written notification was rare, and particularly absent in medical faculties.

Table 5 provides a more detailed assessment of the contribution of each institution to the rotation process and educational opportunities through comparisons between training and research hospitals, city hospitals, and medical faculties.

Rotations Contributing to Residency Training

Approximately 29.2% of participants regarded the anesthesia and reanimation department as the most beneficial rotation, followed by the pediatrics (20.8%) and cardiology (16.9%) departments (Table 6).

The rotations contributing the least were internal medicine, obstetrics and gynecology, with 16.9% of participants finding these rotations inadequate. Additionally, the radiology department was identified as another area with low contribution, with 13.8% of participants rating it as less impactful.

Table 6 summarizes the contribution levels of rotations in emergency medicine residency training, along with participants' opinions on rotations that should be added or removed from the program.

Rotations to be Added or Removed

Sixty percent of participants indicated a need for additional rotations. The most frequently suggested rotation specialties were international emergency clinics (24.6%), thoracic surgery (18.5%), and plastic reconstructive surgery (13.8%).

Regarding rotations that should be removed from the curriculum, 36.2% of participants recommended eliminating certain rotations. Neurology (18.5%), general surgery (10.0%), and radiology (9.2%) were among the most frequently suggested rotation specialties for removal.

DISCUSSION

Emergency medicine is a multidisciplinary field that was first introduced to Turkey in 1993 by emergency medicine specialist Dr. John Fowler. Specialization training in this discipline began in 1994, and it has since continued to expand its impact at an accelerating pace.[1,5] An emergency medicine specialist is responsible for managing emergency medical care, organizing research and educational activities,

Table 4. Interdepartmental rotations: evaluation of participants' achievement of rotation goals and the level of expectation fulfillment

	Yes-partially		Yes-completely		No		I don't know the goals	
	n	Row %	n	Row %	n	Row %	n	Row %
Anesthesiology and reanimation	42	32.3%	8	6.2%	45	34.6%	35	26.9%
General surgery	24	18.5%	10	7.7%	47	36.2%	49	37.7%
Internal medicine	28	21.5%	17	13.1%	44	33.8%	41	31.5%
Cardiology	46	35.4%	14	10.8%	31	23.8%	39	30.0%
Obstetrics and gynecology	21	16.2%	4	3.1%	51	39.2%	54	41.5%
Pediatrics	31	23.8%	10	7.7%	38	29.2%	51	39.2%
Neurology	25	19.2%	12	9.2%	36	27.7%	57	43.8%
Pneumology	28	21.5%	8	6.2%	42	32.3%	52	40.0%
Radiology	27	20.8%	12	9.2%	36	27.7%	55	42.3%
Orthopedics and traumatology	18	13.8%	8	6.2%	42	32.3%	62	47.7%

Table 5. Data on the analysis of questions by institutions

		TRH, City hospital	Faculty of medicine	p value
Do you think the duration of your rotation program is sufficient?	Yes	28 (37.8%)	28 (50.0%)	0.516
	I have no idea	8 (10.8%)	6 (10.7%)	
	No	16 (21.6%)	8 (14.3%)	
	Partially	22 (29.7%)	14 (25.0%)	
To what extent do you think the rotations contribute to your specialty training?	Low	16 (21.6%)	13 (23.2%)	0.719
	Unnecessary	6 (8.1%)	4 (7.1%)	
	Moderate	30 (40.5%)	27 (48.2%)	
	Adequate	22 (29.7%)	12 (21.4%)	
	I don't know	12 (16.2%)	15 (26.8%)	
Are your rotations supervised?	Yes	36 (48.6%)	24 (42.9%)	0.339
	No	26 (35.1%)	17 (30.4%)	
Did you participate in in-clinic training during your rotations?	Yes-some of them	34 (45.9%)	27 (48.2%)	0.235
	Yes-all of them	22 (29.7%)	10 (17.9%)	
	No	18 (24.3%)	19 (33.9%)	
Was there in-clinic training during the rotations you participated in?	I don't know	4 (5.4%)	8 (14.3%)	0.010
	Yes-some of them	44 (59.5%)	35 (62.5%)	
	Yes-all of them	20 (27.0%)	4 (7.1%)	
	No	6 (8.1%)	9 (16.1%)	
Were your rotation goals communicated to you before starting the relevant rotation?	Yes-verbally	32 (43.2%)	26 (46.4%)	0.209
	Yes-in written form	4 (5.4%)	0 (0.0%)	
	No	38 (51.4%)	30 (53.6%)	
Do you think you have achieved the goals of the rotation?	Yes	26 (35.1%)	18 (32.1%)	0.938
	No	24 (32.4%)	19 (33.9%)	
	Partially	24 (32.4%)	19 (33.9%)	
Do you think you have put enough effort into achieving your rotation goals?	Yes	40 (54.1%)	22 (39.3%)	0.241
	No	18 (24.3%)	17 (30.4%)	
	Partially	16 (21.6%)	17 (30.4%)	
When were you informed about the rotations you would be taking?	<1 month	36 (48.6%)	19 (33.9%)	0.321
	<1 year	14 (18.9%)	17 (30.4%)	
	A few days ago	14 (18.9%)	12 (21.4%)	
	I was not informed	10 (13.5%)	8 (14.3%)	
Did you take the relevant rotation in the recommended year of your training?	Yes	46 (62.2%)	31 (55.4%)	0.116
	No-earlier	4 (5.4%)	10 (17.9%)	
	No-later	18 (24.3%)	13 (23.2%)	
	No-i was required to complete it at the end of the training process.	6 (8.1%)	2 (3.6%)	

The Chi-square test was used. It is expressed as column percentages. TRH: Training and research hospital

providing health information to the community when necessary, and ensuring the effective assessment of patients presenting with acute illness or injury in critical situations, with the necessary equipment and authority.[1] Additionally, considering that each hospital's emergency department serves an average of 1.000 patients daily, emergency medicine undoubtedly plays a significant role in the healthcare system of the country.[7,8] In fact, according to data from 2021, nearly half (48.6%) of the 1.61 hospital visits per capita were made directly through emergency services.[8,9] Considering the patient load in emergency departments, the intensive practical requirements encountered during residency training, and the increasing role of emergency medicine specialists, it is concluded that the quality of emergency medicine education must be enhanced.

For almost 30 years, emergency medicine specialty training in Turkey has not only ensured that patients are treated in the best possible way with a modern approach; but has also encouraged the advancement of high standards in emergency care.[1] Associations representing the field of emergency medicine in Turkiye, along with related studies, report that emergency medical services in recent years have approached the standards observed in developed countries.[10] Considering the continuously evolving practices and innovations in emergency medicine, it becomes evident that a standardized training program must be implemented for residents during the specialization process. In this context, the "Emergency Medicine Proficiency Board" has been established in Turkey, and specific standards for specialization in emergency medicine have been developed.[11] However, despite these advancements, there is a lack of objective data regarding the

Tablo 6. Contribution levels of rotations to specialist training and participants' perspectives on rotations to be added or removed

		n	Row %
Which rotation has contributed the most to your specialty training?	Anesthesiology and reanimation	38	29.2%
	Pediatrics	27	20.8%
	Cardiology	22	16.9%
Which rotation has contributed the least to your specialty training?	Internal medicine	22	16.9%
	Obstetrics and gynecology	22	16.9%
	Radiology	18	13.8%
Do you think some rotations should be added?	Yes	78	60.0%
	I have no idea	14	10.8%
	No	38	29.2%
If so, what should be added? (Multiple answers were provided.)	Emergency departments abroad	32	24.6%
	Thoracic surgery	24	18.5%
	Plastic reconstructive and aesthetic surgery	18	13.8%
Do you think some rotations should be removed?	Yes	47	36.2%
	I have no idea	16	12.3%
	No	67	51.5%
If so, which ones should be removed? (Multiple answers were provided.)	Neurology	24	18.5%
	General surgery	13	10.0%
	Radiology	12	9.2%

implementation of emergency medicine residency training programs. In particular, several deficiencies exist concerning the duration, content, educational contributions of rotations, and their ability to meet trainees' expectations.[5]

In Turkiye, the first evaluation study of emergency medicine education was conducted by Aksay and colleagues[5] in 2006. This study revealed that emergency medicine residents did not find the rotations in their training programs to be efficient and emphasized the need for further research in this area. The number of studies in the literature examining the effectiveness and efficiency of rotations is limited, and no feedback mechanism supervises the educational process.[6] In this context, our study aims to determine the current opinions of residents about the content of the training program and to contribute to the improvement of the quality of emergency medicine education.

The total duration of emergency medicine specialty training in Turkiye is 4 years, with 9 months of this period spent in clinical rotations across relevant specialties. The current rotation program, approved by MSB with decision number 727 in 2016, specifies the duration of rotations and recommended specialty training years.[4] In the first year of specialty training, rotations in anesthesiology and reanimation, general surgery, internal medicine, and cardiology each last one month. In the second year, the rotations in pediatrics last two months, while obstetrics and gynecology, neurology or pulmonology, and orthopedics and traumatology or radiology each last one month.[4] This program aims to provide experience in basic specialties during the first two years of specialty training. However, a study by Sezik and colleagues[6] found that residents were sent to rotations later than planned, and these rotations were forced to be completed at the end of the training process. Similarly, in our study, 40.8% of participants reported that they could not attend rotations in the recommended training year. This recurring issue suggests that, despite the MSB decision, specialty training institutions are not sufficiently monitored, and if the decision is not implemented, no effective sanctions are applied.

In our study, 18.5% of participants indicated that the rotation program's duration was insufficient, leading to difficulties, while 33.1% stated that they could not achieve the rotation objectives. Similar results were found in previous studies. Aksay et al.[5] reported that 44.7% of students could not reach the objectives of the rotations, and Sezik and colleagues[6], in a study conducted five years later, identified challenges in achieving the same objectives. Our findings suggest that these issues persist today. These results indicate that the regulations in emergency medicine specialty training may have been insufficient and that the rotation programs should undergo a more comprehensive evaluation. We believe that MSB, along with emergency medicine associations and foundations, should take greater responsibility for making the rotation programs more functional by developing new proposals and implementing the necessary regulations. Additionally, to strengthen the multidisciplinary aspect of emergency medicine specialty training, rotations in certain clinical specialties should be extended and enriched in terms of content.

The responses to the questions regarding the presence of in-clinic training during rotations indicate that participants working in research and training hospitals have a higher rate of receiving training in each rotation, whereas this rate is significantly lower in medical faculties. Similarly, in a study by Sezik et al.,[6] it was reported that emergency medicine residents working in research and training hospitals performed specific interventional procedures at a higher rate. These findings suggest that residents in medical faculties do not have equal opportunities for quality training, clinical skill development, and practical experience compared to their counterparts in research and training hospitals. To address this inequality, it is emphasized that the educational programs in medical faculties should be improved, and more opportunities should be provided for developing clinical skills.

According to our research results, a large portion of participants (76.2%) found the in-clinic education during rotations to be beneficial. However, 60.8% of the participants stated that in-clinic education was only available in some rotations. This indicates that there are significant differences in the standards applied to educational processes across clinical departments. Consequently, it is once again emphasized that the educational content of rotation programs should be reviewed, gaps should be addressed, and educational processes in clinics should be regularly monitored. Such measures would increase the contribution of rotations to the overall quality of education and facilitate the achievement of training goals during the residency period.

In our study, the rotations that contributed most to the education of the residents were anesthesiology and reanimation (29.2%), pediatrics (20.8%), and cardiology (16.9%). Similarly, in the literature, the cardiology rotation has been reported as one of the clinical departments providing the greatest contribution to education.[5,6] This can be explained by the high number of patients in the

emergency department requiring electrocardiographic and echocardiographic evaluations, making the knowledge gained during the cardiology rotation critically important in daily clinical practice. The knowledge and skills gained in the management of cardiac emergencies are believed to enhance residents' professional competence.

Consistent with our findings, the anesthesiology and reanimation rotation is also reported as one of the most valuable rotations in terms of educational contribution.[5] In this rotation, emergency medicine residents gain experience in interventional procedures such as sedation and analgesia, peripheral nerve block, endotracheal intubation, tracheostomy, and central venous catheterization, which help reinforce these skills. These findings highlight the importance of clinical rotations, which are foundational to emergency medicine education, and underscore their role in enhancing residents' professional skills and knowledge.

The rotations most frequently requested for removal were neurology (18.5%), general surgery (10.0%), and radiology (9.2%). Similar to our findings, in Aksay et al.'s[5] study, the general surgery rotation was reported as one of the least contributing rotations to education. This may be related to the reduced preference for surgical specialties by physicians today, resulting in a higher workload and patient volume that limits the time allocated to educational processes. Removing the rotations that contribute the least to emergency medicine education from the current curriculum, making improvements to increase their efficiency, or offering them as elective rotations could be effective approaches to address these issues. Such measures would not only improve the effectiveness of the educational program but also offer a structure that better meets the educational needs of residents.

Our study findings reveal that rotation programs have deficiencies in terms of both duration and content, and significant issues exist in their implementation. While some rotations provide substantial educational benefits; others fall short in this regard. Research and training hospitals offer better clinical experience opportunities, while medical faculties experience educational inequality. This situation suggests that there is a need for a re-evaluation of the rotation programs, enrichment of their content, and the establishment of more equitable educational processes.

Limitations

Our study has the general limitations associated with survey-based research. Since our data reflect the personal opinions of both emergency medicine residents and emergency medicine specialists, which are subjective in nature, this should be considered when interpreting the results. Additionally, the exclusion of opinions from the education coordinators in the rotation clinics limits the scope of our findings to some extent.

In the future, studies evaluating the effectiveness of rotations through more comprehensive methods and including different stakeholder groups (such as education coordinators in rotation clinics) could contribute more to the literature and provide a stronger foundation for making changes in clinical practices.

CONCLUSION

This study provides significant insights into the rotation experiences of emergency medicine residents. While rotations are primarily expected to be education-focused, the majority of participants reported being required to adopt an approach centered on fulfilling service needs and returning to their clinical departments. The findings highlight the need for increased supervision of clinical training and rotation processes. Additionally, extending rotation durations and making training content more comprehensive are among the key suggestions put forward by the participants.

Participants working in training and research hospitals are more engaged in clinical training and tend to evaluate these processes more positively. This suggests that the educational infrastructure and supervision mechanisms in these hospitals are more effective compared to those in medical faculties. The findings emphasize the importance of standardizing educational content and sharing best practices to enhance rotation effectiveness. In this context, developing new approaches for improving the current system and implementing these approaches plays a crucial role in increasing the overall quality of rotation programs.

The primary reasons for not achieving rotation goals include deficiencies in clinical infrastructure, insufficient educational opportunities, and limited chances for hands-on procedures. To address these issues, strengthening inter-clinic collaboration and planning the educational process by the needs are essential. Improving clinical infrastructure, providing various educational materials, and creating environments that allow for hands-on practice in procedures are of critical importance. Furthermore, establishing regular feedback mechanisms and developing solution-oriented approaches will enhance the effectiveness of rotation programs.

ETHICAL DECLARATIONS

Ethics Committee Approval

This study was conducted after obtaining approval from the Ethics Committee of Kahramanmaraş Sütçü İmam University, Faculty of Medicine (Date: 26.08.2024, Decision No: 03).

Informed Consent

All patients signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

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Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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